

Reconsideration of the present application is respectfully requested in view of the remarks which follow.

Claim 11

As an initial matter, Applicants note that the Office Action Summary indicates that claim 11 has been rejected; however, there is no rejection of claim 11 in the Office Action. Applicants request clarification as to the status of claim 11.

Rejections Under 35 U.S.C. §103

On page 2 of the Office Action, the PTO has rejected claims 1-5, 7, 8, 12, 14-16 and 19-20 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 6,070,616 to Beck *et al.* to (hereafter "Beck") in view of U.S. Patent 4,470,452 to Rhodes (hereafter "Rhodes") and U.S. Patent 6,321,835 to Damsohn *et al.* (hereafter "Damsohn"). In addition, on page 4 of the Office Action, the PTO has rejected claims 10 and 18 under 35 U.S.C. §103(a) as being unpatentable over Beck, Rhodes and Damsohn in further view of JP 359125395A to Imai Shuji (hereafter "Imai"). Applicants respectfully traverse this rejection for the reasons set forth below.

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 180 USPQ 580 (CCPA 1974). See MPEP §2143.03. In the previous response, Applicants amended claim 1. The primary reference cited by the PTO, Beck, fails to disclose or fairly suggest a heat exchanger for a motor vehicle "(v) *wherein the ratio of*

the distance between the first flat face and the second flat face of the vortex generator rows in the direction of the tube longitudinal axis

to the height of the vortex generators is approximately 10 to 30"

as recited in amended claim 1. Further, none of the secondary references, e.g. Rhodes, Damsohn and/or Imai, taken either alone or in fair combination with Beck, resolves this basic deficiency.

The PTO's asserts, at lines 9-11 on page 3 of the Office Action, that Figure 6 of Rhodes discloses that a ratio between the vortex generator row spacing between the first flat surface (120) and the second flat surface (126), with respect to the height of the vortex generator is about 7. Applicants respectfully disagree with the PTO's assertion for at least two reasons. First, Rhodes simply doesn't disclose any row spacing in the longitudinal direction, and second, even if such spacing were shown in the drawings, it is inappropriate for the PTO to assume that the patent drawings are to scale in deriving a ratio solely from measurements taken on the drawings.

As to the first point, it appears as though the PTO may have misinterpreted the drawings in the Rhodes reference. As can be seen in the *lateral* cross-sectional view of Figure 5 of Rhodes, the flow diverting members 152 are arranged directly opposite one another, i.e., not displaced in the longitudinal direction. The figure does not depict any *longitudinal* offset of the diverting members, e.g. offset along the *longitudinal* axis of the tube. This is also the case in Figure 6, when one recognizes that, as shown in Figure 5, different numbers of flow diverting members are present on the top surface of the tube as compared to the lower surface. Consequently, the section which is depicted in Figure 6 does not show that a gap is present between the first and second rows of the vortex generators, and Figure 6 of Rhodes cannot disclose the relationship between the distance between the first flat face of the vortex generator and the second flat face of the vortex generator rows in the direction of the tube *longitudinal* axis and the height, as set forth in feature (v) of claim 1.

Such an arrangement can be seen, by way of example, in Figures 2 and 3 of the present application, where the distance between the first flat face and the second flat face of the vortex generator rows in the direction of the tube longitudinal axis is labeled "a". The ratio of feature (v) of claim 1 is the ratio of "a" to the height of the vortex generators, which is referred to in the specification and drawings as "h".

Since, none of the references, taken either individually or in fair combination, teaches or suggests the claimed ratio of "a" to "h" in feature (v) of claim 1, Applicants submit that the outstanding rejection of claim 1 under 35 U.S.C. §103(a) is improper and ought to be withdrawn.

Where an independent claim is nonobvious under §103, then any claim depending therefrom is also nonobvious. *In re Fine*, 5 USPQ2d 1596 (Fed. Cir. 1988). See MPEP §2143.03. Thus, Applicants submit that claims 2-5, 7, 8, 10-12 and 14-21, which depend directly or indirectly independent claim 1, are also non-obvious.


In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of this rejection under §103.

CONCLUSION

In view of the foregoing remarks, Applicants respectfully submit that all of the pending claims are now in condition for allowance. An early notice to this effect is earnestly solicited. If there are any questions regarding the application, the Examiner is invited to contact the undersigned at the number below.

Respectfully submitted,

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By 

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